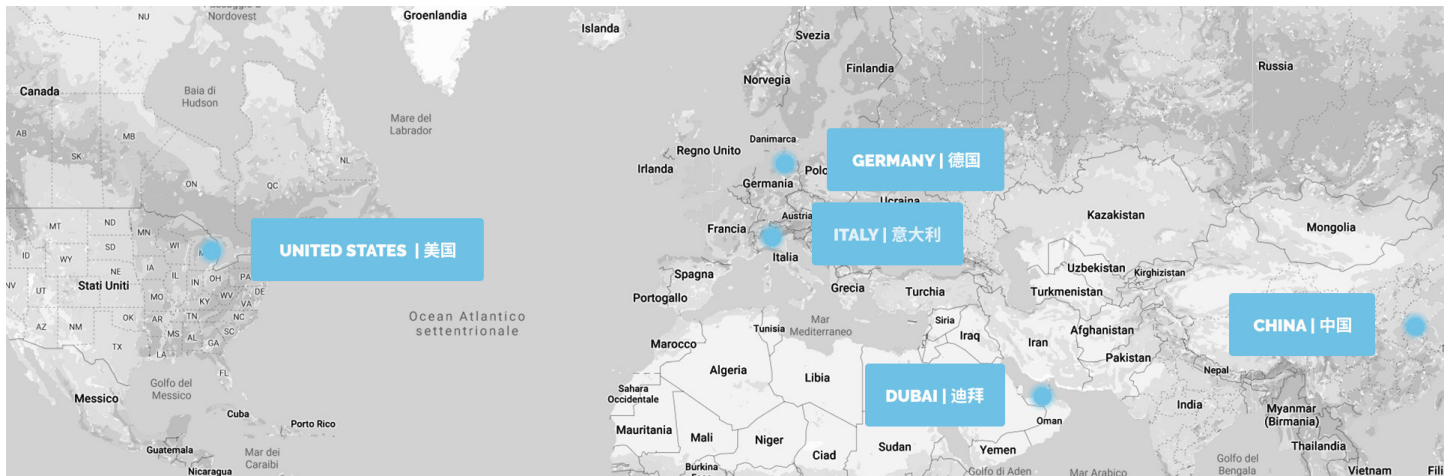


EN | ZH

CNC MILLING

DRIVE YOUR TECHNOLOGY

COMI Worldwide | COMI 全球



The Group | 集团介绍

COMI is established in August 1973 with the aim of designing and producing thermoforming machinery, specifically for the refrigeration sector.

After more than 45 years of activity, today COMI is a solid industrial reality, with more than 3.500 systems installed in over 50 countries all around the world, a top-level reference list and a brand among the most prestigious in its market. When the significant development abroad consolidated the company as a reference player in the refrigeration sector, the management decided to diversify its range of solutions through the expansion of its staff, hiring specific technically skilled people, together with an intense activity of company acquisitions, including: **TECHMILL**, expert in CNC machining centers; **AMUT COMI**, specialized in packaging thermoforming machines; **COMI TÈAS**, specialized in automation and laser cutting systems.

COMI公司成立于1973年8月,起始目标为专业从事白色家电行业热成型机的设计与制造。经过超45年的发展,如今的COMI公司,已成长为行业内的现象级企业,有超过3.500台套设备在全球50多个国家安装使用,拥有全球最顶级的品牌客户群体,是市场上最具声望的设备供应商。在国际市场的卓越发展,成就了公司在白色家电领域设备供应商中的标杆企业地位;而通过跨行业的公司并购整合,公司在多元化发展道路上也在迅速地发展壮大,形成了一系列著名的子品牌家族: **TECHMILL**, CNC加工中心的专家; **AMUT COMI**, 致力于包装行业热成型机业务; **COMI TÈAS**, 专业从事钣金线、自动化和激光切割系统的开发制造。



Facts & Figures | 现况与数据

200

Employees/员工
among direct and indirect
相关人员

4

Manufacturing/工厂
facilities in Italy
在意大利

4

Subsidiaries/子公司
abroad
国外

52

Milion/百万
euro revenues
欧元营业额

95%

of Sales/的销售
from international markets
来自国际市场

5%

Invested/投资
constantly in R&S
在研发部分

4

Proprietary/专利
technologies
专有技术

+3.5k

Machines/机器设备
installed globally
在全球安装使用

Key Sector | 主要应用行业



Household Appliances
家用电器



Marine
船舶



Automotive
汽车



Hydro-sanitary
厨卫



Aerospace
航空航天



Railway
铁路

“ The strong know-how of TechMill division makes it the **ideal partner** when high customization is required.

TechMill is a division of COMI Group which offers a complete range of CNC machining centers for machining of a wide range of materials.

Labor milling centers range is dedicated to the machining of plastic materials, glass fiber, carbon fiber, composites, up to aluminum and light alloys.

Ventor is instead the high performance milling centers range dedicated to machining of metals, from aluminum up to special steels and titanium. The range consists of 12 models, specifically developed to match application requirements, size of the working piece, production needs in automotive, aerospace, molding, marine, railway, industrial, appliances.

All machines are designed according to the most restrictive international standards in terms of safety for the operator and protecting the environment.

“ TechMill事业部的专业能力让其成为最高定制需求条件下的客户的理想合作伙伴。

TeMill是COMI集团的一个事业部,提供完整范围的CNC加工中心,可用于广泛材料的加工。

Labor系列铣削加工中心是专用于加工塑料、玻璃钢、碳纤维、复合材料以及铝和轻合金等材料。

Ventor系列是高性能铣削加工中心专用于金属的加工,从铝直到特种钢以及钛合金。

范围包含12个型号规格,特别用于满足不同工件尺寸的应用需求,产品应用于汽车、航空航天、模型、船舶、铁路、工业、电器等领域。

所有机按照最严苛的操作安全和环保国际标准设计。



SELECTION CRITERIA

选择标准

		COMPOSITES 复合材料	PLASTICS 塑料	RESIN 树脂	WOOD 木头	ALUMINIUM 铝	LIGHT ALLOYS 铝合金	AEROSPACE 航天	AUTOMOTIVE 汽车	MARINE 船舶	RAILWAY 铁路	WIND 风能	MOLD 模具	INDUSTRIAL 工业
LaborMix														
X: 2.500 - 6.100 mm Y: 1.500 - 3.100 mm Z: 900 - 1.200 mm	2,2 / 12 kW 18.000 - 32.000 rpm	✓	✓	✓	✓				✓		✓			✓
LaborMax														
X: 3.200 - 6.200 mm Y: 2.000 - 2.600 mm Z: 900 - 1.200 mm	10 / 12 / 15 kW 24.000 rpm	✓	✓	✓	✓	✓			✓		✓		✓	✓
LaborMac														
X: 2.600 mm Y: 1.500 - 1.700 mm Z: 1.000 - 1.200 mm	15 / 22 kW 24.000 rpm	✓	✓	✓		✓	✓	✓	✓				✓	✓
LaborMidi														
X: 3.000 - 12.000 mm Y: 1.500 - 2.000 mm Z: 250 - 600 mm	22 kW 20.000 rpm		✓		✓	✓							✓	✓
LaborShape														
X: 2.000 - 6.000 mm Y: 2.000 - 3.000 mm Z: 900 - 1.500 mm	22 / 30 / 42 kW 18.000 - 24.000 rpm	✓		✓		✓	✓	✓					✓	✓
LaborWind														
X: 6.000 - 50.000 mm Y: 4.000 - 8.500 mm Z: 1.200 - 4.500 mm	15 / 22 kW 20.000 - 24.000 rpm	✓		✓	✓	✓		✓		✓		✓		
LaborMarine														
X: 4.000 - 50.000 mm Y: 2.600 - 8.000 mm Z: 1.200 - 3.000 mm	10 / 15 / 22 kW 20.000 - 24.000 rpm	✓		✓	✓	✓			✓	✓				
LaborSpace														
X: 10.000 - 20.000 mm Y: 4.000 - 8.000 mm Z: 3.000 - 6.000 mm	10 / 15 / 22 kW 20.000 - 24.000 rpm	✓		✓			✓	✓						

✓ Best application / 最佳应用

✓ Suggested application / 推荐应用

LABORMIX

LaborMix is a 5 interpolated axis milling center specifically designed for the machining of plastic and composite materials.

Equipped with working head with spindle at two opposite exits or four independent spindle head, it is the best solution for three-dimensional trimming of thermoformed parts. With working head with spindle and automatic toolchanger, it is instead widely used for the machining of small resin and wood models.

LaborMix allows to achieve very high productivity results and quality in trimming operations, with modeling capability.

LaborMix 系列是一种五轴铣削加工中心特别设计用于加工塑料和复合材料。

在两个反向出口配有带电主轴的工作头, 或者四套独立的电主轴头。这是热成型件三维修剪的最佳选择。通过电主轴工作头和自动换刀装置的配合, 可以广泛应用于小型树脂和木材模型的加工。

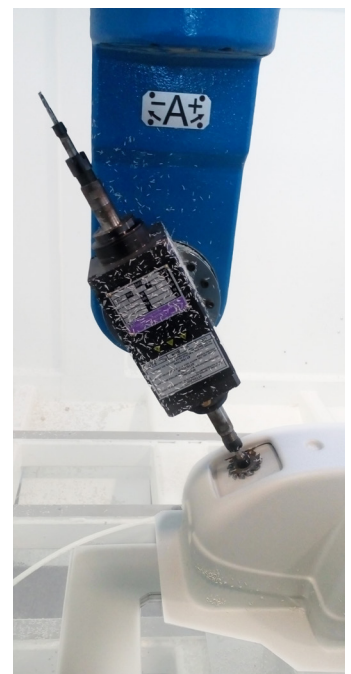
LaborMix系列允许在修剪操作中获得非常高的生产率和质量,具有建模能力。

AXIS STROKES / 轴行程		SPEED / 速度
X	2.500-6.100 mm / 98-240"	80 m/min
Y	1.500-3.100 mm / 59-122"	80 m/min
Z	900-1.200 mm / 35.4-47.2"	40 m/min
A (*)	+/- 120°	30 rpm
C (*)	+/- 365°	30 rpm

NUMERICAL CONTROL / 数控	
Siemens	840 D SL

ELECTROSPINDLE / 电主轴	
Double opposite exit <i>Mandrino bialbero</i>	2,2 kW 24.000 / 32.000 rpm
Revolver at 4 stations 反向双出口 / 在4个工位的旋转器	

TOOLS MAGAZINE / 刀库	
Linear / 直线	from 8 pos. / 从 8 位.



LABORMAX

LaborMax is an extremely versatile working center capable to satisfy the milling requirements on a wide variety of materials, with characteristics which made it the best solution for composite materials working operations.

Available in several standard dimensions and versions, with fixed, rotary (pallet changer) or extractable tables, with different power working head, with linear or rotary tool magazines.

LaborMax is distinguishing for the great versatility, the wide possibility to furthermore complete the machine with auxiliary devices, the stiffness of the structure, for whole technical characteristics which position it at the top of its category.

LaborMax系列是一种极其通用多能的加工中心, 能够满足各种材料的加工要求, 此特征使其成为复合材料加工作业的最佳解决方案。

有几个标准尺寸和版本可供选择, 配有固定、旋转(托盘更换装置), 或可抽出的工作台, 不同功率的工作头, 直线或旋转刀库。

LaborMax 系列具备强大的通用多能特征, 可以配置更广泛的附属设备, 采用更强大的结构, 这种技术特征让其位列此门类产品的顶部位置。

AXIS STROKES / 轴行程		SPEED / 速度
X	3.200-6.200 mm / 126-244"	80 m/min
Y	2.000-2.600 mm / 78-102"	80 m/min
Z	900-1.200 mm / 35.4-47.2"	40 m/min
A (*)	+/- 120°	30 rpm
C (*)	+/- 365°	30 rpm

NUMERICAL CONTROL / 数控

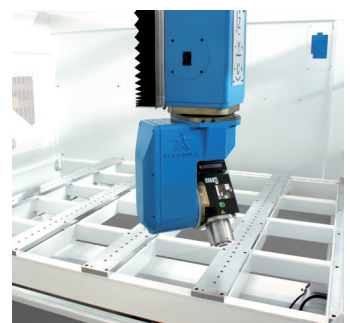
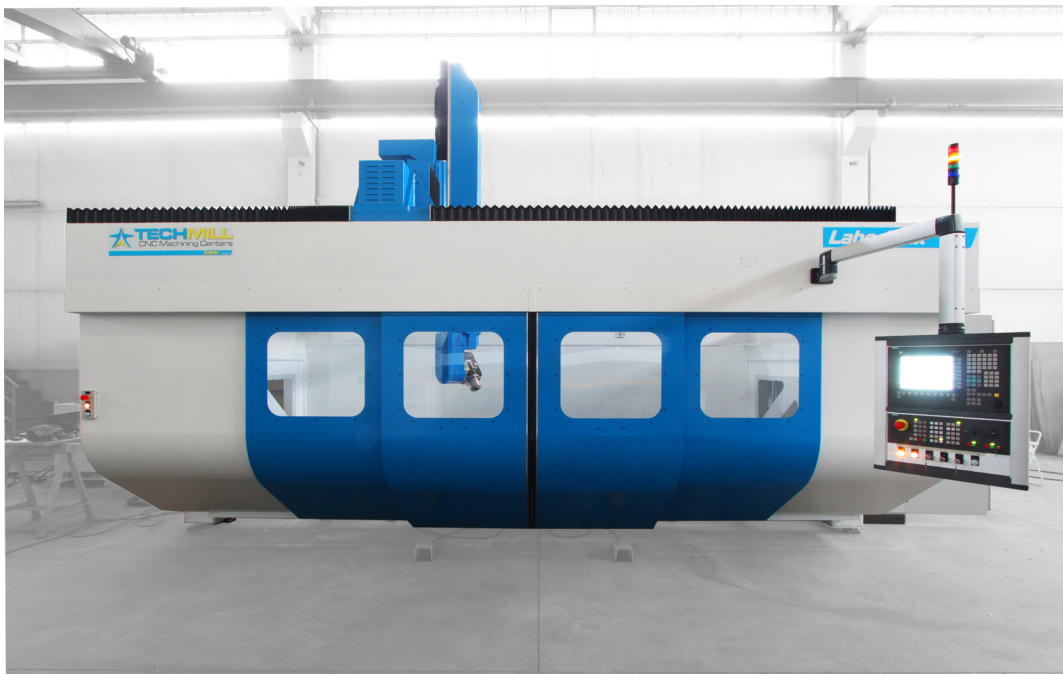
Siemens	840 D SL
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ELECTROSPINDLE / 电主轴

10 kW	24.000 rpm
12 kW	24.000 rpm
15 kW	24.000 rpm

TOOLS MAGAZINE / 刀库

Linear / 直线	from 8 pos. / 从 8 位.
Rotating / 旋转	from 12 pos. / 从 12 位.



LABORMAC

LaborMac is a 5-axis machining center specifically developed to optimize the machining of molds and parts in aluminum and composite. The extreme rigidity provided by the monolithic structure with Gantry type mobile portal on the Y axis, significantly limits the vibrations helping to achieve very good quality even at high speeds.

LaborMac version "C" offers instead high performance in modeling and trimming of composite materials and resins, can be equipped with Oil Mist and suction hood for dust extraction.

The version "A", dedicated to aluminum machining, is equipped with a working head of higher robustness, tool's cooling system by chemical water, steel table with T-slots and two chips conveyors.

LaborMac 系列是一个专为优化铝和复合材料模具和零件的加工而开发的五轴加工中心。Y轴的移动桥采用龙门式整体结构保证了极强刚度,可显著地抑制振动,有助于在高速作业时也能达到很高的质量。

LaborMac "C" 可为复合材料和树脂的建模和修整提供高性能的加工,可以配置油雾装置和除尘吸罩。

LaborMac 版本"A",专用于铝加工,配备了高稳健性工作头,化学水刀具冷却系统,带T型槽的刚工作台和两套料屑输送装置。

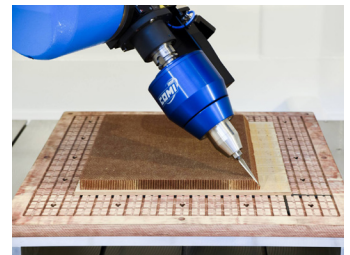
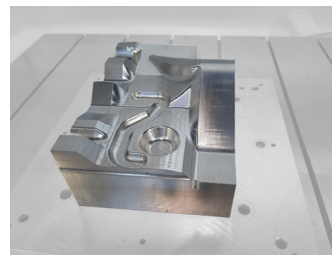
AXIS STROKES / 轴行程		SPEED / 速度
X	2.600 mm / 102.4"	80 m/min
Y	1.500-1.700 mm / 59.1-67"	80 m/min
Z	1.000-1.200 mm / 39.4-57.2"	60 m/min
A (*)	+/- 120°	30 rpm
C (*)	+/- 365°	30 rpm

NUMERICAL CONTROL / 数控

Siemens	Heidenhain
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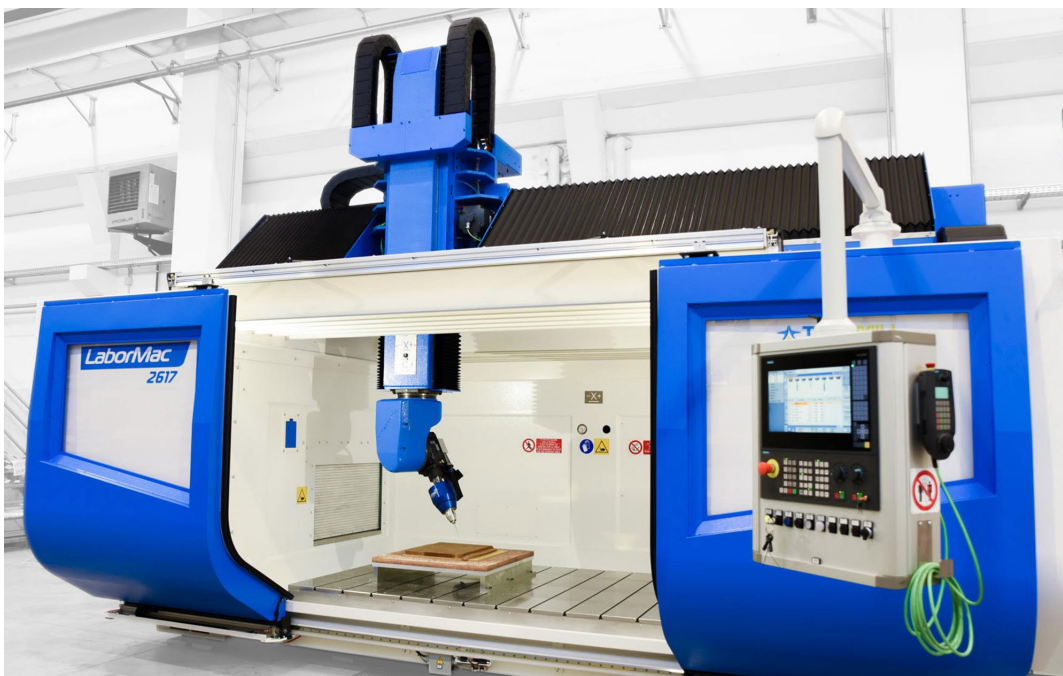
ELECTROSPINDLE / 电主轴

15 kW	24.000 rpm
22 kW	24.000 rpm



TOOLS MAGAZINE / 刀库

Linear / 直线	from 8 pos. / 从 8 位.
Rotating / 旋转	from 10 pos. / 从 10 位.



LABORMIDI

LaborMidi has been specifically designed to machine aluminum, polycarbonate and technical polymers.

Its "open" configuration with mobile bridge allows a wide access from the 2 sides of the machine, but also allows to be used in totally automated production systems which require automatic loading/unloading by robotized devices. Available in the 3 and 5 axes version, it can be equipped with a wide range of accessories according to customer needs.

LaborMidi is an effective solution for panel machining with a very good quality/price ratio, extremely easy to install and introduce in the production process.

LaborMidi系列被专门设计用于加工铝、聚碳酸酯人造板和其它技术聚合材料。

其“开放式”配置与移动桥允许从机器的两边进入设备,也可以在配置机器人化自动上料/卸载装置的全自动生产系统中使用。有3轴和5轴版本可供选择,也可根据客户需要配备各种附件。

LaborMidi 是板材加工的有效解决方案,具备很高的性价比,在生产过程中极易安装和引入。

AXIS STROKES / 轴行程		SPEED / 速度
X	3.000-12.000 mm / 118-472"	80 m/min
Y	1.500-2.000 mm / 59-78"	80 m/min
Z	250-600 mm / 9.8-23.6"	40 m/min
A (*)	+/- 120°	40 rpm
C (*)	+/- 365°	30 rpm

NUMERICAL CONTROL / 数控

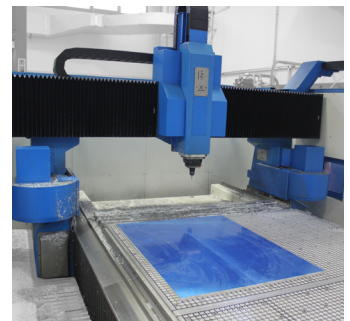
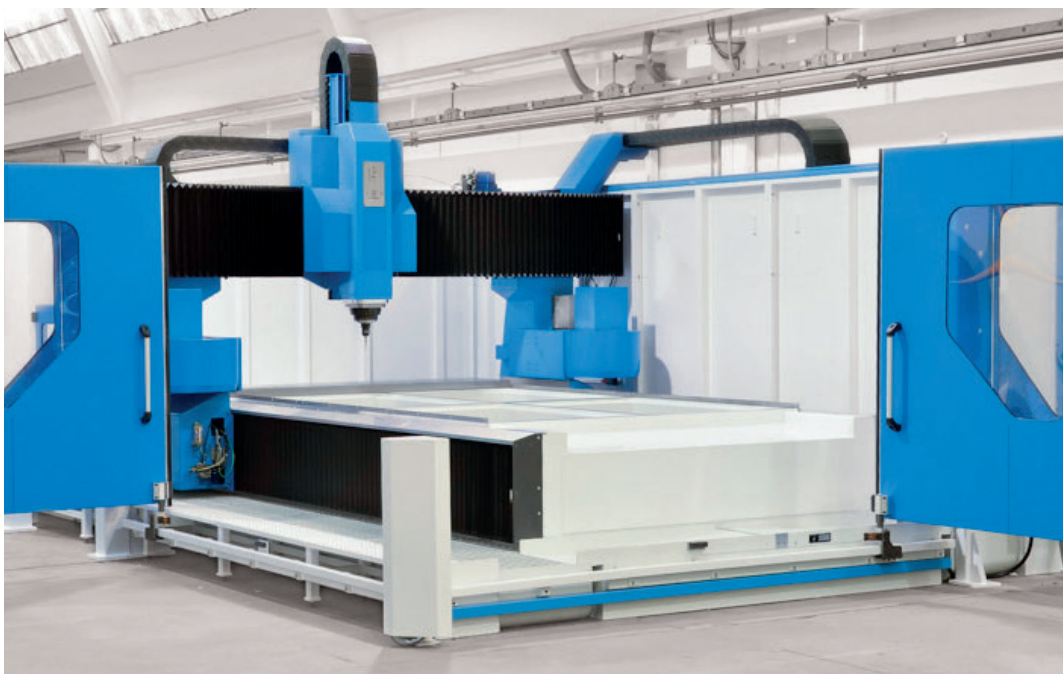
Siemens	Fanuc
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ELECTROSPINDLE / 电主轴

3 Axis working head 3轴工作头	22 kW 20.000 rpm
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TOOLS MAGAZINE / 刀库

Rotating / 旋转	from 10 pos. / 从 10 位.
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LABORSHAPE

LaborShape is a 5 axis machining center specifically designed for high speed machining on aluminum and light alloys.

Compact dimensions and extremely rigid monolithic structure, axis displacement with recirculating ball screws and magnetic linear guides to ensure the best accuracy, working head with torque motors are the main technical features which makes this model the best solution for high chip removal.

LaborShape is the best answer to the working requirements for mould in aluminum or light alloys, whereas accuracy and quality of finishing are requested.

LaborShape系列是专门为铝和轻合金高速加工而设计的五轴加工中心。

紧凑尺寸和极高刚性的整体结构、轴位移用循环滚珠丝杠和磁性线性导轨保证了最佳精度,工作头采用扭矩电机是其主要技术特点,使该型号成为高切削量的最佳解决方案。

LaborShape 是有高精度和高质量精整加工要求的铝或轻合金中模具加工的最佳解决答案。

AXIS STROKES / 轴行程	SPEED / 速度
X 2.000-6.000 mm / 78-236'	80 m/min
Y 2.000-3.000 mm / 78-118''	80 m/min
Z 1.250 mm / 49.2''	80 m/min
A (*) +/- 120°	40 rpm
C (*) +/- 365°	40 rpm

NUMERICAL CONTROL / 数控

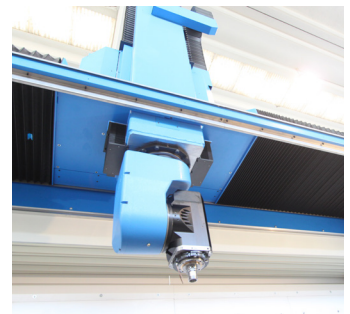
Siemens	840 D SL
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ELECTROSPINDLE / 电主轴

22 kW	18.000 rpm
30 kW	20.000 rpm
42 kW	24.000 rpm

TOOLS MAGAZINE / 刀库

Linear / 直线	from 8 pos./从 8 位.
Rotating / 旋转	from 16 pos. /从 16 位.



LABORWIND

LaborWind is the family of machining centers designed for those applications requiring the biggest working area, especially for the vertical "Z" axis.

The mobile crossbeam, "suspended" on lateral steel or reinforced concrete structures, allows to cover very large working areas without overload the basic structure of the machine. Available with various spindle power and tool magazine configurations, with longer longitudinal axis strokes versions the machine can also be supplied with double mobile crossbeam and independent working unit, thus to double the production capacity.

LaborWind is the solution for the machining of parts and models of wind turbines and yachts.

LaborWind系列是适用于要求最大工作范围的加工中心系列,特别是垂直“Z”轴。

移动桥,“悬浮”在钢或钢筋混凝土结构,允许覆盖非常大的工作区域而不会造成机器基本结构的超载。具有各种主轴动力和刀库配置,纵向轴行程较长的机器也可提供双移动横梁和独立工作装置,从而使生产能力翻倍。

LaborWind 系列是用于加工风力涡轮机和游艇零件和模型的最佳解决方案。

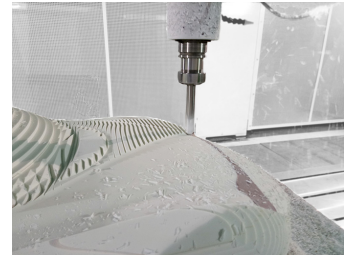
AXIS STROKES / 轴行程		SPEED / 速度
X	6.000-50.000 mm / 157-334"	80 m/min
Y	4.000-8.500 mm / 315-1968"	80 m/min
Z	1.200-4.500 mm / 47.2-177"	40 m/min
A (*)	+/- 120°	30 rpm
C (*)	+/- 365°	30 rpm

NUMERICAL CONTROL / 数控

Siemens	840 D SL
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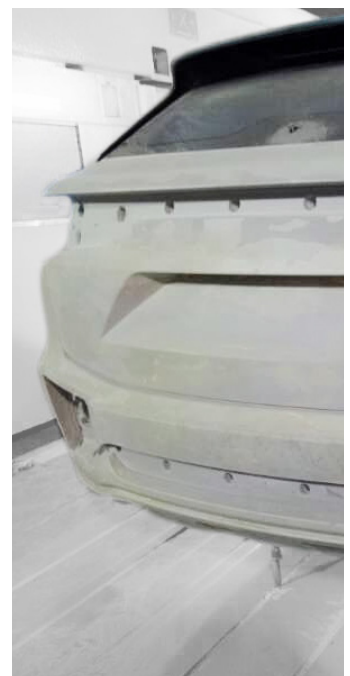
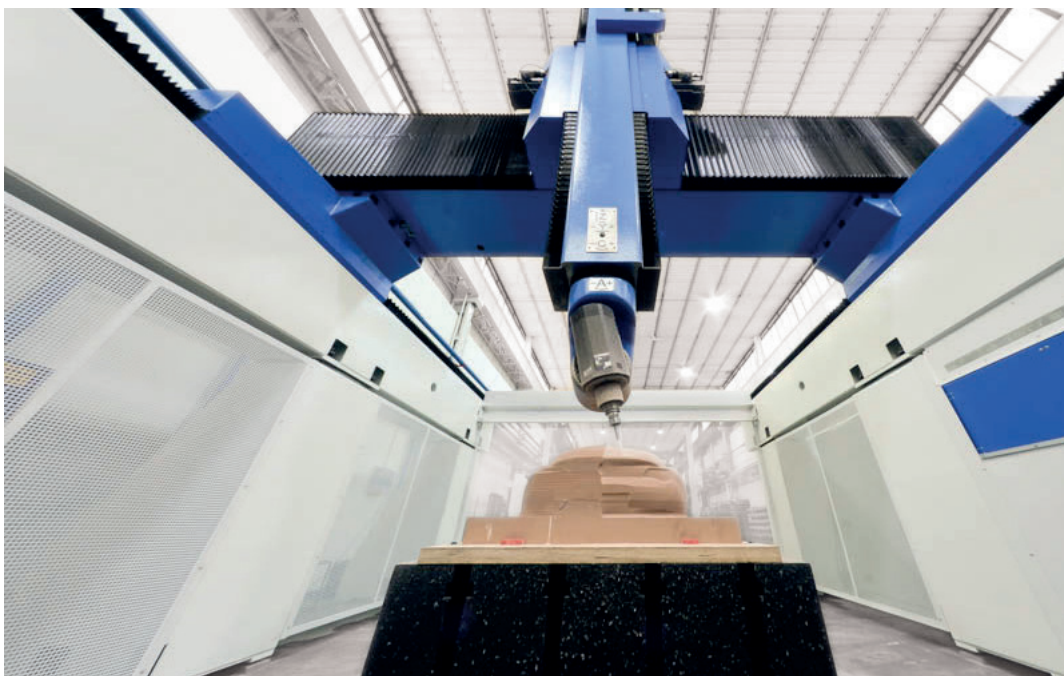
ELECTROSPINDLE / 电主轴

15 kW	24.000 rpm
22 kW	20.000 rpm



TOOLS MAGAZINE / 刀库

Linear / 直线	from 8 pos. / 从 8 位.
Rotating / 旋转	from 10 pos. / 从 10 位.



LABORMARINE

LaborMarine allows to have an appropriate working area for large dimension parts milling, ensuring at the same time the maximum machine accessibility for loading/unloading operations. Although these are typical requirements of the marine sector model manufacturers, today this machine is particularly appreciated also from the foundry model makers.

Thanks to its mobile portal configuration, the machine can also be laterally loaded/unloaded, with clear advantages for the manufacturing space organization.

With LaborMarine the working area is exactly configurable according to the specific need, making the best use of the available space in the factory.

LaborMarine系列可以拥有适合大尺寸零件铣削的合理工作区域,同时确保装卸操作的最大机器可达性。虽然这些是船舶领域模具制造商的典型要求,但今天这种机器也特别适合铸造模具制造商。

由于其采用移动龙门配置,机器可以从侧面上料/卸载,因此在有效利用空间上具有明显的优势。

使用 LaborMarine ,工作区域可以根据具体需要配置,充分利用工厂中的可用空间。

AXIS STROKES / 轴行程		SPEED / 速度
X	4.000-50.000 mm / 102-315"	80 m/min
Y	2.600-8.000 mm / 157-1970"	80 m/min
Z	1.200-3.000 mm / 47.2-118"	40 m/min
A (*)	+/- 120°	30 rpm
C (*)	+/- 365°	30 rpm

NUMERICAL CONTROL / 数控

Siemens	840 D SL
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ELECTROSPINDLE / 电主轴

10 kW	24.000 rpm
15 kW	24.000 rpm
22 kW	20.000 rpm

TOOLS MAGAZINE / 刀库

Linear / 直线	from 8 pos. / 从 8 位.
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LABORSPACE

LaborSpace is a special CNC machining center which integrates the functions of a mobile portal milling machine with a rotating unit typical of a horizontal lathe, designed to perform machining of high dimension aerospace propulsion systems.

It is capable to machine aerospace solid motor cases up to 20 meters length by 5 meters diameter, made by advanced composites materials (carbon fiber and epoxy resin) protected by a rubber layer and equipped with aluminum flanges, which may reach 120 tons weight.

Laborspace capable to perform precisely on very wide, long and high strokes the three critical operations for that parts manufacturing process: the composite multilayer cutting, the light alloy flanges drilling and the external rubber machining.

AXIS STROKES / 轴行程		SPEED / 速度
X	10.000-20.000 mm / 157-315"	30 m/min
Y	4.000-8.000 mm / 394-788"	30 m/min
Z	3.000-6.000 mm / 118-236"	20 m/min
A (*)	+/- 120°	30 rpm
C (*)	+/- 365°	30 rpm

NUMERICAL CONTROL / 数控

Siemens	840 D SL
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LaborSpace系列是一种特殊的加工中心, 集成整合了移动龙门桥式铣削机床和卧式车床旋转单元的功能, 专门设计用于大尺寸航空航天推进器系统。

可以加工航空航天固态燃料电机罩壳加工, 长度达到20m、直径达到5m的工件, 工件采用先进复合材料(碳纤维和环氧树脂)表层带橡胶保护层和配有铝法兰, 最大重量可达120吨。

LaborSpace 适用的制造工艺过程: 复合材料多层切割, 轻合金法兰的钻孔和外部橡胶加工。

ELECTROSPINDLE / 电主轴

10 kW	24.000 rpm
15 kW	24.000 rpm
22 kW	20.000 rpm

TOOLS MAGAZINE / 刀库

Linear / 直线	from 8 pos. / 从 8 位.
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PROCESS AND APPLICATIONS

PRODUCTION

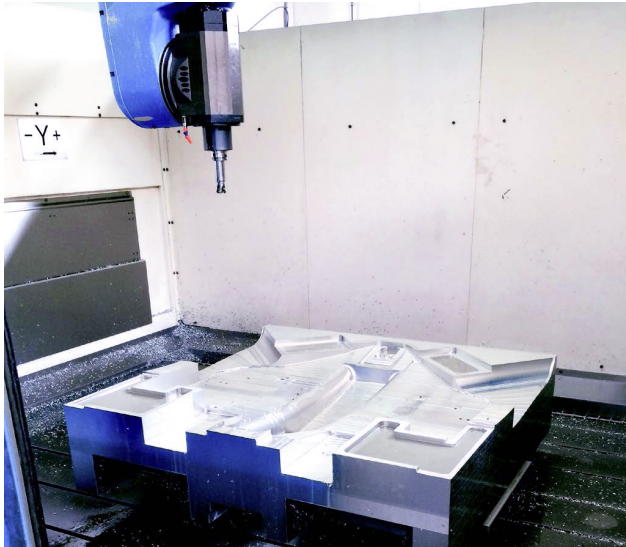
Mold / 模具

MATERIAL

Aluminum / 铝

SECTOR

Industrial / 工业



工艺与应用

生产

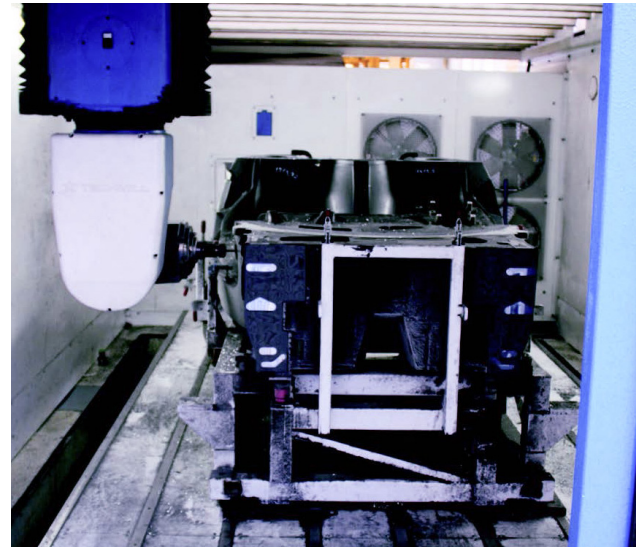
Luxury car extra-lightweight frame / 奢侈品极轻车架

材料

Carbon fiber / 碳纤维

领域

Automotive / 汽车



PRODUCTION

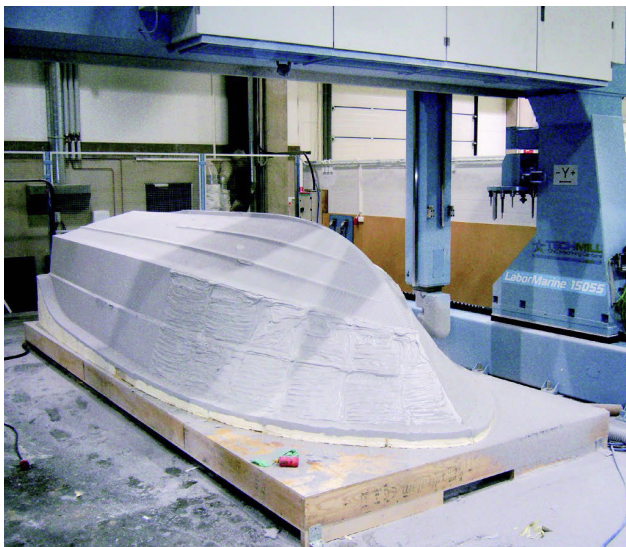
Boat hull plug / 船体插件

MATERIAL

Composite: glass fiber + resin / 复合材料:玻璃纤维+树脂

SECTOR

Marine / 船舶



生产

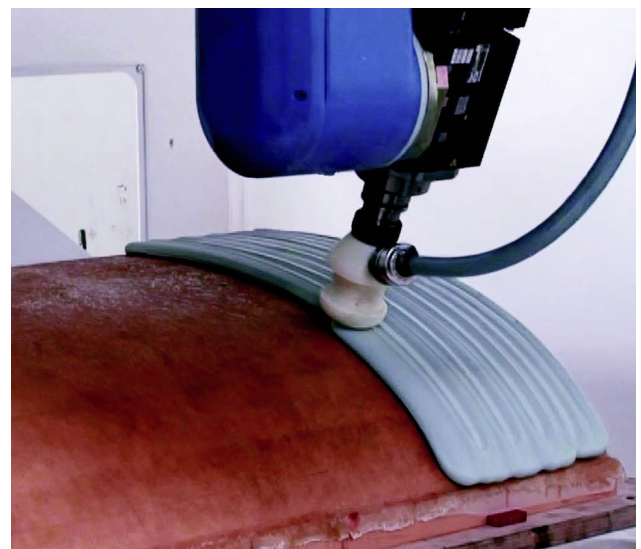
Models / 模型

材料

Modeling paste / 模型用浆

领域

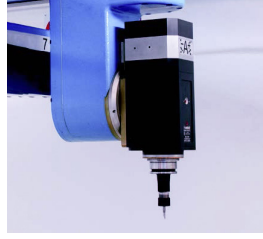
Industrial, Automotive, Marine / 工业, 汽车, 船舶



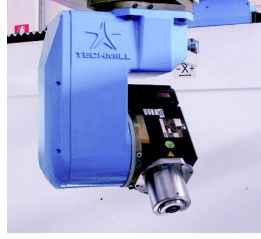
Working Heads / 工作负责人



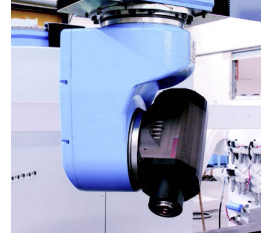
CUT



MIX



MAX



SHAPE



TB

ELECTROSPINDLE / 电主轴

2,2 kW (Dual-Bi)

10 kW

12 kW

15 kW

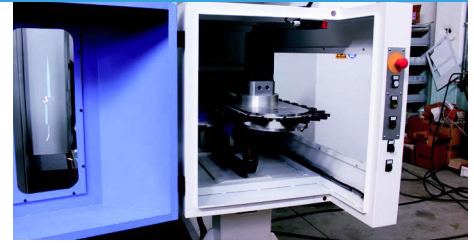
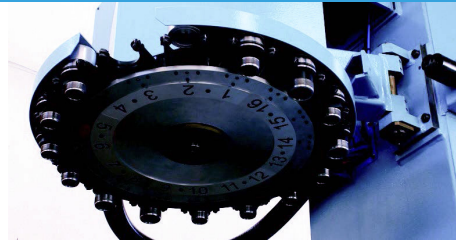
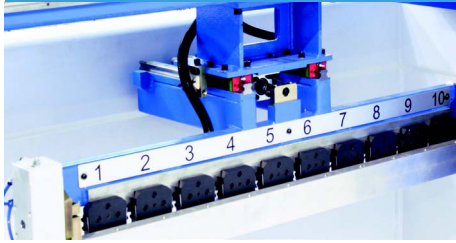
22 kW

24 kW

30 kW

42 kW

Tools magazine / 刀库



Working Table / 工作表



STEEL



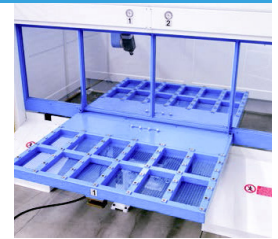
CAST IRON



ALUMINIUM

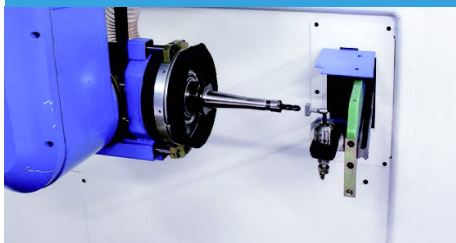


RANPREX



ROTATING

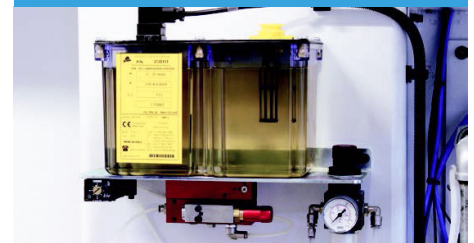
Tool setter / 刀具调节器



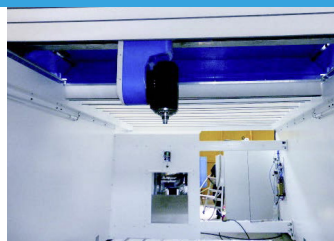
Touch probe / 探头



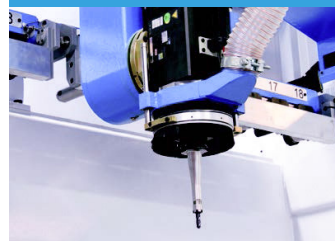
Oil Mist / 油雾



Total enclosure / 整体密闭罩



Dust Extraction / 除尘



SELECTION CRITERIA

选择标准

		ALUMINIUM 铝	LIGHT ALLOYS 铝合金	STEEL 钢	CASTIRON 铸铁	TITANIUM 钛	AEROSPACE 航天	AUTOMOTIVE 汽车	MOULDING 造型	MOLD MAKER 模具制造	INDUSTRIAL 工业
VentorFast		X: 2.000 - 6.000 mm Y: 1.500 - 3.000 mm Z: 1000 - 2.000 mm	18 - 50 kW 45 - 160 Nm 15.000 - 45.000 rpm	✓	✓	✓	✓	✓	✓	✓	
VentorMaster		X: 2.500 - 10.000 mm Y: 2.000 - 4.000 mm Z: 1.000 - 2.000 mm	11 - 105 kW 210 - 1.000 Nm 8.000 - 12.000 rpm	✓	✓	✓		✓	✓	✓	
VentorPower		X: 6.000 - 40.000 mm Y: 3.800 - 5.000 mm Z: 1.000 - 2.000 mm	11 - 105 kW 210 - 1000 Nm 8.000 - 12.000 rpm	✓	✓	✓	✓	✓	✓	✓	✓
LaborMidi		X: 2.000 - 6.000 mm Y: 2.000 mm Z: 1.000 mm A: +/- 110° C: +/- 190°	90 kW 32 Nm 32.500 rpm Taper : HSK - F 80	✓	✓	✓	✓	✓	✓	✓	

VENTORFAST

VentorFast is a 5-axis machining center “portal” type with mobile bridge and fix working table, designed to obtain the maximum rigidity and the best resistance even under the most severe working conditions.

The vertical axis rigidity is guaranteed by movement performed along 4 guides within the “RAM” “box-in-box” structure.

The X/Y/Z axis displacement is obtained by dual drive gantry system, while the axes positioning accuracy is detected by optical lines.

The machine can be equipped with 5 axes continuous interpolation as well as with “Index” type heads.

VentorFast performs high speed machining and high accuracy processing of aluminum and steel, with proved successfull applications in the aerospace sector.

VentorFast系列是一种具有移动桥和固定工作台的五轴加工中心“龙门”型, 即使在最恶劣的工作条件下, 也能获得最大的刚度和最佳的耐磨性。

RAM垂直轴采用”箱中箱”结构, 其刚度通过在4根导轨上执行的运动来保证。

采用双驱动龙门系统获得X/Y/Z轴位移, 通过线性光学装置检测轴系定位精度。

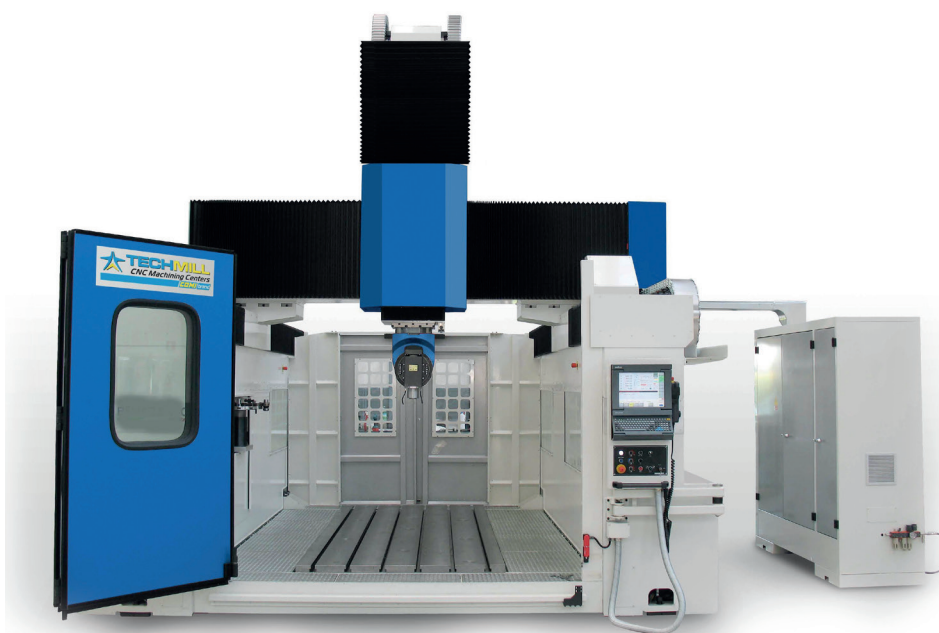
该机可配备5轴连续插补以及分度工作头。

VentorFast 系列用于执行铝和钢的高速和高精度加工, 已经在航空航天领域成功应用。

AXIS STROKES / 轴行程		SPEED / 速度
X	2.000-6.000 mm / 78-236”	60 m/min
Y	1.500-3.000 mm / 59-118”	60 m/min
Z	1.200-2.000 mm / 47-78”	40 m/min
A (*)	+/- 120°	30 rpm
C (*)	+/- 365°	30 rpm

ELECTROSPINDLE / 电主轴	
10-65 kW	5.000-30.000 rpm
40-180 Nm	HSK-A 63
TOOLS MAGAZINE / 刀库	
Rotating / 旋转	from 24 pos. / 从 24 位.

NUMERICAL CONTROL / 数控	
Siemens	Heidenhain



VENTORMASTER

VentorMaster is a 5-axis machining center designed to obtain high torque needed to work on hard metals such as steel and titanium.

This machines have a fixed table and mobile transversal bar which runs along the X axis guides which are placed in the upper part.

The axes movements are on roller guides and screw rectified to double preloaded scroll, while the axes positioning accuracy is detected by optical lines. The movement of the vertical axis "RAM" occurs within a "box-in-box" structure.

Available 5 axis heads versions either with continuous interpolation or «Index» type. VentorMaster develops high torque and has an extremely robust structure, features which makes it particularly suitable for metal machining performed by molding companies and mold makers.

VentorMaster系列是一种五轴加工中心, 其设计可实现在硬材料比如钢和钛上作业所需要的高扭矩。

该机器有一个固定的工作台和移动横梁, 它沿着装在上部的X轴导轨运行。

轴运动发生在滚针导轨上和双预加载滚动丝杠上, 并通过线性光学装置检测轴定位精度。垂直轴在“箱内箱”结构内运动。可选择使用分度型或连续插补运动型5轴工作头。

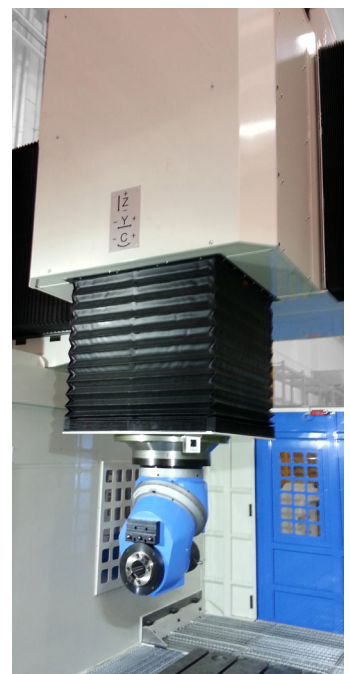
VentorMaster 系列可实现高扭矩加工, 具有极强的结构, 特别适用于建模造厂家和模具制造商进行金属加工。

AXIS STROKES / 轴行程		SPEED / 速度
X	2.500-10.000 mm / 98-394"	40 m/min
Y	2.000-4.000 mm / 78-156"	40 m/min
Z	1.200-2.000 mm / 47-78"	40 m/min
A (*)	+/- 120°	30 rpm
C (*)	+/- 365°	30 rpm

ELECTROSPINDLE / 电主轴	
30-100 kW	5.000-30.000 rpm
150-1.000 Nm	HSK-A 100 (ISO 50)

TOOLS MAGAZINE / 刀库	
Rotating / 旋转	24 pos. / 24 位

NUMERICAL CONTROL / 数控	
Siemens	Heidenhain



VENTORPOWER

VentorPower is a 5-axis machining center, portal type with mobile bridge and fixed table, equipped with advanced technological solutions capable to reach outstanding performances.

The axes movements are on roller guides and screws rectified to double spiral preloaded, the positioning accuracy of the axes is detected by optical lines, the RAM is "box in box" type.

Available also a "cross mobile" version with Z1 Racing (RAM) up to 1800 mm and Z2 (bar) up to 4000 mm. Can be mounted both heads with 5 axes with continuous interpolation or "Index" type, additional option the «automatic head change» system.

VentorPower is a machining center for steel, cast iron, titanium and aluminum, suitable for industrial sectors such as Mechanical Fabrication.

VentorPower系列是一种五轴加工中心,配有龙门型移动桥和固定台,配备先进的技术解决方案,能够达到卓越的性能。

轴运动发生在滚针导轨上和并经双螺旋预加载丝杠上, 轴的定位精度由线性光学装置检测, 垂直轴RAM为“箱内箱”型。

该机器同时提供一个“交叉移动”版本, Z1高达1800mm和Z2 (梁)高达4000mm。

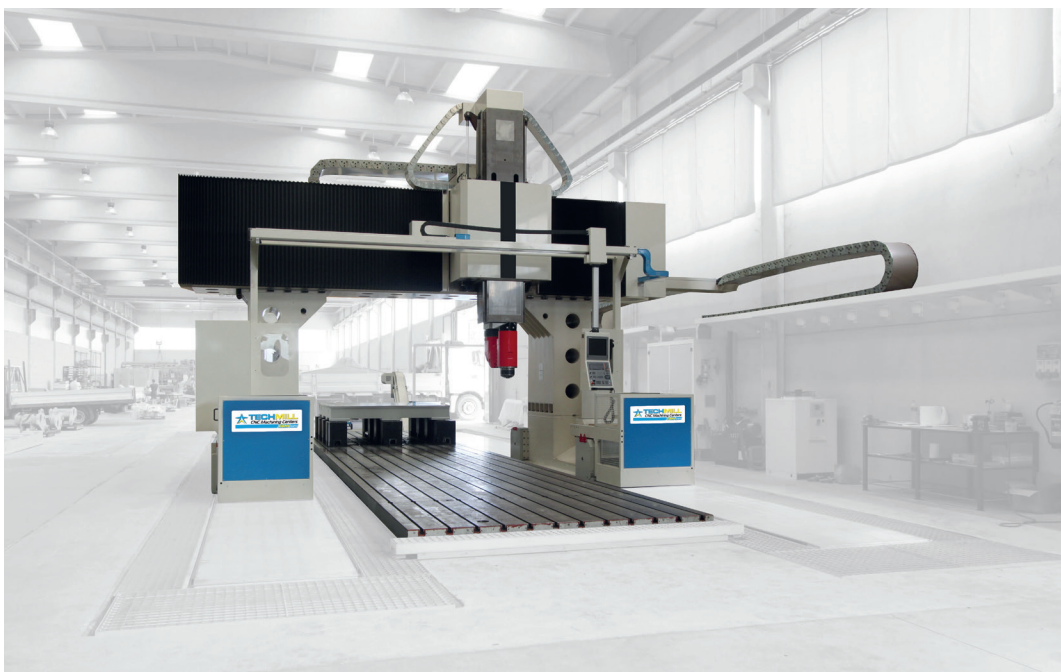
两个工作头可选用5轴连续插补运动型或分度型。另提供额外选项“头部自动更换系统”。

VentorPower系列是用于钢、铸铁、钛加工的加工中心, 适用于工业领域比如机械制造。

AXIS STROKES / 轴行程		SPEED / 速度
X	6.000-40.000 mm / 236-1575"	40 m/min
Y	3.800-5.000 mm / 150-197"	40 m/min
Z	1.000-2.000 mm / 39-78"	40 m/min
A (*)	+/- 120°	30 rpm
C (*)	+/- 365°	30 rpm

ELECTROSPINDLE / 电主轴	
30-100 kW	5.000-30.000 rpm
150-1.500 Nm	
TOOLS MAGAZINE / 刀库	
Rotating / 旋转	from 24 pos. / 从 24 位.

NUMERICAL CONTROL / 数控	
Siemens	Heidenhain



MONNALISA

Monnalisa is the innovative 5 axes horizontal working center specifically developed for the machining of monolithic aluminum structural parts of large dimensions, particularly suitable for applications in the aeronautical sector.

The extremely robust structure is made entirely of cast iron and properly reinforced to obtain maximum rigidity and dynamicity with minimal thermal drift.

The tables are two large worktops, symmetrical to each other (pallet changer) in order to allow the operator to replace the pieces during the processing phases, in a comfortable position and in full safety.

AXIS STROKES / 轴行程		SPEED / 速度
X	2.000-6.000 mm / 78-236"	50 m/min
Y	2.000 mm / 78"	50 m/min
Z	1.000-2.000 mm / 39-47"	50 m/min
A (*)	+/- 110°	210°/sec
C (*)	+/- 200°	210°/sec

TILTING TABLE / 翻转台

From vertical to horizontal positioning 90° standard
从垂直到水平90度定位

ELECTROSPINDLE / 电主轴

90 kW	30.000 rpm
29 Nm (S1)	HSK-F 80

TOOLS MAGAZINE / 刀库

Chain / 链式	from 60 pos./从 60 位.
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Monnalisa系列是一种创新的卧式五轴加工中心, 专门开发用于大尺寸整体铝结构件的加工, 特别适用于航空航天领域。

机器采用极稳定的完整的铸造结构并经过合理强化, 从而可获得极高的刚性和动力性能, 和最小的温度漂移。

工作台是由两个大尺寸工作台面组成, 对称布置(托盘更换装置), 以允许操作者在加工期间以舒适和安全的状态更换工件。



MONNALISA

The aluminum work tables are designed to use both the vacuum suction that any fixing system for the piece, with a flow rate of 2,000 kg for each floor.

The piece loading is made simple by the rotation of the table of 90° obtained with two mechanical arms hydraulically actuated, while for gripping the table four hydraulic pistons are used.

The large capacity tool's magazine allows to have more than 100 tools, it is positioned laterally and is properly protected from chips and dust when not used.

Thanks to the large size tape evacuator positioned below the work surface, a volume of 1 cubic meter of chips per hour is evacuated. The X carriage is made by a rigid structure to double upright in cast iron and is moved by 4 gear-boxes with integrated pinion and 4 brushless motors. The scheme is a gantry of two Dual Drive systems for the recovery of the games via electronic preload.

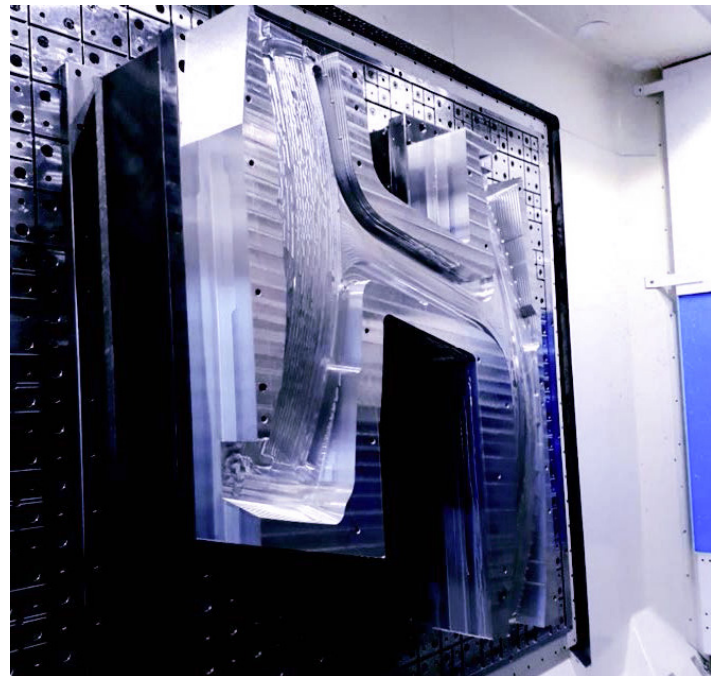
铝工作台设计同时采用真空吸附和其它固定系统来固定工件, 每层流速2000kg。

工件上料通过工作台90度的旋转, 通过两套液压驱动机械臂来轻松完成, 而工作台的夹紧是通过四套液压活塞来完成。大容量刀库可配备超过100把刀, 安装在侧面, 在不用的时候有合理的防料屑和防尘保护。

位于工作表面下的大尺寸排屑装置可保证每小时带走1立方米的料屑。X轴台车为铸造双直立刚性结构, 由四套带有集成的尺寸的齿轮箱和无刷伺服电机驱动。其方案是两套双驱动系统通过电子预加载来完成作业。



Bulkhead - 舱壁-铝 7040
966 x 1347 x 178 mm – 38.5 x 53 x 7”
400 Kg > 7,5 Kg in 6- hours



Windshield - 挡风板-铝 7475
2540 x 1067 x 50 mm – 100 x 42 x 2”
700 Kg > 12 Kg in 20- hours



Comi Group



Comi Group



COMI spa

THERMOFORMING
热成型



METAL SHEET
钣金生产线



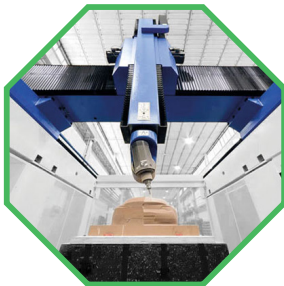
PRESSES
压机



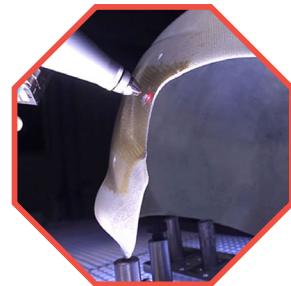
AUTOMATION
自动化



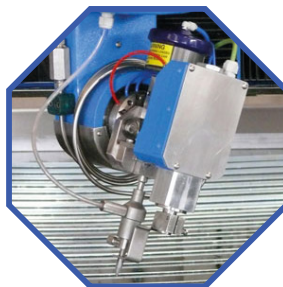
CNC MILLING
CNC加工



LASER CUT
激光切割



WATERJET CUT
水切割



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📍 AMUT-COMI
Vigevano (PV) - Italy

📍 COMI TEAS
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